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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,774	03/30/2001	Jonathan Sobel	57983.000046	6976

7590 04/07/2005  
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EXAMINER
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TANG, KUO LIANG J

ART UNIT	PAPER NUMBER
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2191

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/822,774

Applicant(s)

SOBEL ET AL.

Examiner

Kuo-Liang J Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/8/2005 has been entered.

***Response to Arguments***

2. Applicant's arguments filed 3/8/2005 have been fully considered but they are not persuasive.

Claims 1, 6, 11 are amended. Claims 4 and 9 are cancelled.

Claims 1-3, 5-8 and 10-13 are pending and have been examined.

Claims 1-3, 5-8 and 10-12 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza in view of McGuire.

Claim 13 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza in view of McGuire, further in view of Bak.

3. Following is the examiner's response to Applicant's arguments with respect to claim 1:

**Applicant's argument:**

Applicants argue that the previously submitted Appendix B highlight the fact that C++ and Scheme are not interchangeable languages.

**Examiner's response:**

The examiner does not agree Applicants' assertion that that C++ and Scheme are not interchangeable language. In fact, the Appendix B (titled "An introduction to Scheme for C programmers") is only mentioned about both "C" and "Scheme" languages. This is different that Applicants' statements for "C++" and "Scheme" languages.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza, US Patent No. 5,881,291 (art of record) in view of McGuire et al., US Patent No. 6,598,186 (art made of record, hereinafter McGuire).

As Per Claim 1, Piazza teaches a compiler and compilation method for processing a source program in a programming language in the Scheme/Lisp family into a representation known as continuation-passing style (CPS) before generating object code, with optimization also

being involved in the processing.. (E.g. see Abstract and associated text). In that Piazza discloses the method that covering the steps of:

“transforming a first program (E.g. see FIG. 1, source code 11 and associated text, i.e. Scheme programming language) having a first multi-tasking property (note that Scheme has been using continuations to simulate multitasking, E.g. see Applicant’s specification, page 17, lines 20-22), wherein the first multi-tasking property comprises a property relating to a preemptive multitasking model (E.g. see FIG. 2, test block 23 and associated text, i.e. a long-running “loop set”), into a data structure (E.g. see FIG. 1, standard CPS 15 and associated text);”.

“transforming the data structure to include an explicit multi-tasking transfer of control command (E.g. see FIG. 1, standard CPS 15 and associated text);”

“optimizing the data structure to reduce an amount of program state that is saved at a transfer of control (E.g. see FIG. 1, OPTIMIZATION 16 and associated text);” and

“generating a second program having a second multi-tasking property, wherein the second multi-tasking property comprises a property relating to a run-to-completion model. (E.g. see FIG. 2, test block 24, “convert-loop” and associated text, i.e. after conversion, the long running loop is no longer long but several small/short pieces, so each piece can be run within a certain period of time interval, which can be considered as a “run-to-completion”), using the optimized data structure (E.g. see FIG. 1, GENERATE OBJECT CODE 12 and associated text).”

Piazza teaches a programming language in the Scheme/Lisp family. Piazza does not explicitly disclose C/C++ program. However, McGuire in an analogous art teaches “the system and method for variables representing Quantities is implemented in an object oriented language from Curl Corporation. The language allows the creation of objects and has similar capabilities

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to those found in languages such as Scheme, Lisp and C++." (E.g. see col. 8:32-37). Therefore, it would have been obvious to incorporate the teaching of McGuire into the teaching of Piazza to use the object oriented language such as Scheme, Lisp and C++. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide more choices to use when choosing an object oriented language like Scheme, Lisp and C++ as a development tools to develop the computer system.

As per Claim 2, the rejection of claim 1 is incorporated and further Piazza teaches

"the data structure further comprises a syntax tree (E.g. see col. 1:45-46, CPS tree)."

As per Claim 3, the rejection of claim 2 is incorporated and further Piazza teaches

"the step of transforming the data structure to include an explicit multi-tasking transfer of control command further comprises: converting the syntax tree to a continuation-passing style (CPS)." (E.g. see FIG. 1, standard CPS 15 and associated text).

As per Claim 5, the rejection of claim 1 is incorporated and further Piazza teaches

"the first program having a first multi-tasking property operates using a first program language and the second program having a second multi-tasking property also operates using the first program language." (E.g. see col. 1:39-55, which states "... the transformation or conversion consists of adding an extra argument, a continuation, to each combination. ..."). It is inherent that the second program language is still the same as the first program language.

As per claims 6-8 and 10, are system claims corresponding to the method claims 1-5 and are rejected under the same reason set forth in connection of the rejection of claims 1-3 and 5 respectively. Further Piazza discloses computer system (E.g. see FIG. 3 and associated text; and col. 8:58 to col. 10:61).

As per claims 11-12, are article of manufacture and processor readable medium, which are in fact a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1 respectively. (E.g. see col. 8:58 to col. 10:61).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza, in view of McGuire and further in view of Bak et al., US Patent No. 6,704,927 (hereinafter Bak).

As per Claim 13, is a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1. The combination teaching of Piazza and McGuire does not explicitly disclose a signal embodied in a carrier wave.

However, Bak teaches “a data signal embodied in a carrier wave” (E.g. see col. 11:16-20). It is a well-known practice. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bak into the system of Piazza and McGuire, to have a data signal embodied in a carrier wave. The modification would have been obvious because one of ordinary skill in the art would have been motivated to include this well-known practice in the product so that it can be used in various environments.

***Correspondence Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang J Tang whose telephone number is (571) 272-3705.

The examiner can normally be reached on 8:30AM - 7:00PM (Monday – Thursday). Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Tuan Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

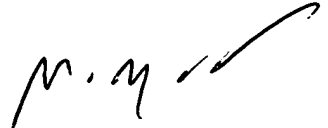


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kuo-Liang J. Tang*

Software Engineer Patent Examiner



WEI Y. ZHEN  
PRIMARY EXAMINER